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ABSTRACT

A study examined the computer and information technology (CIT) training provided in 61 training schemes in 10 regions throughout the United Kingdom under the auspices of the Youth Training Scheme. Of the 52 programs for which data on the time spent on CIT were available, 12 offered 5 days or less of off-the-job training with little other instruction, 27 offered 10 days of off-the-job training, and only 8 offered more than 2 weeks' worth. Those providers that delivered CIT as one element of a series of training components found their greatest handicap to be the restricted amount of time available for CIT. Three variables proved critical to training effectiveness: the quality of the trainers, the tutor-trainee ratio, and the amount of resources available. The 61 programs examined trained slightly in excess of 6,000 trainees, with most large providers having 1 computer per trainee. The amount of CIT training offered varied widely from provider to provider. Assessment and certification proved to be key elements of training effectiveness. (Appendixes include an area office survey matrix, program assessor contextual comments, a discussion of work with the West Wales Accredited Centre, and schemes for CIT practice in workshops.) (MN)

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UNIVERSITY OF SURREY & ROEHAMPTON INSTITUTE
CENTRE FOR

RESEARCH IN YOUTH AND FURTHER EDUCATION

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SURVEY OF CURRENT PRACTICE IN COMPUTER AND INFORMATION TECHNOLOGY IN THE YOUTH TRAINING SCHEME

Alan Brown and Julian Mills

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Survey of Current Practice in Computer and Informtion Technology in the Youth Training Scheme

Introduction

This report is the second in a series of information papers produced as an outcome of a research project looking at computer and information technology (CIT) training in the Youth Training Scheme (YTS). Information for this report was collected during a series of visits in the period July to December 1986. As with all the information series papers, this report is seen as an opportunity to open up debate about CIT education and training.

The intention was to obtain an overall picture of how CIT was being treated in YTS. The establishment of this information-base was seen as vital to ensure that any recommendations made are firmly grounded in an understanding of actual practice. For this reason, it is vital that what is commented upon in this report is **not** necessarily seen as implying that it is `good practice'. Our recommendations about good practice are the subject of a subsequent report.

The major component of this work consists of the "Area Office" survey. This was, however, supplemented with work with a number of accredited centres, national training organizations together with contact with individual schemes and providers. (The latter often contacted through exhibitions or conferences.)

A **Area Office Survey: Context**

The "area office" survey involved a visit to an area office in each region with just one exception (in the North West, alternative arrangements were made to collect information through one of the accredited centres). Typically, a researcher would then interview a single programme assessor about the CIT component of each scheme for which they were responsible. The coverage of every scheme was intended to ensure that undue weight was not given only to the best local schemes. (There were minor variations to this procedure: sometimes other staff also contributed comments or else attention was drawn to practice elsewhere.

However, overall it was possible to build up similar "slices" of activity in a single area in each region.) The information upon which the 53 individual schemes from 9 regions collected in this manner was compiled in matrix form, coupled with general comments to situate the material in an area/regional context. (We would wish to acknowledge the high degree of co-operation we received at all the area offices.) The material from the tenth region was worked up into a similar form making a total of 61 schemes. The volume of this material was too substantial to be presented here. Hence summaries of findings are presented together with some illustrations of the type of information collected. Appendix 1

gives illustrations of the type of information collected from 25 of the schemes, while Appendix 2 gives contextual information and comments from local programme assessors about CIT in some of the areas from which those schemes were drawn.

Note also that some of these schemes, especially those candidates for "good practice", have either already been visited by the research team or else arrangements are in hand for them to do so. Some further detail of these schemes may therefore figure in future reports.

B Area Office survey: Summary of findings

Time

Of the 52 schemes for whom a figure of time spent on CIT was obtainable and excluding the 2 ITeCs:

- 12 offered 5 days or less off-the-job with little else, except perhaps the odd visit

- 5 offered 5 days off-the-job, with varying amounts of time engaged in on-the-job activities (but this could be substantial)

- 27 offered 10 days or equivalent off-the-job, with some possibility of other CIT activities (although 2 schemes allowed trainees to spend up to 10 days depending on interest)

- 8 offered more than 2 weeks off-the job (typically 3 or 4, but occasionally 6 or 8 weeks). These schemes often had substantial on-job CIT activities for trainees as well.

The `5 days with little else' was inadequate even for 1 year YTS (the `blue book' considered "the CIT core activities are expected to take the equivalent of 60 hours training time", and the training module example involved 10 days off-the-job plus other activities). While some of these providers were considering stepping up CIT activities, others were resistant, arguing that they could see little point in CIT for their trainees.

The majority of schemes were conforming to the existing `guidelines' (although how these were interpreted or even used varied from region to region), while some saw CIT training as highly significant.

This variation is understandable, but what is interesting is that there are very few examples of `compensatory' use of more CIT activities either on or off-job to overcome limited opportunities in the other component. High or low usage in one tended to be reflected in the other component. This does mean that objections to specifying clear guidelines about time, because of the danger of duplication of activities, is overstated. While not wishing to re-introduce a time-serving element, the focus upon an

external qualification for CIT activities could be accompanied by the finding that providers consider it usually takes about, for example, 15 days off-the-job to reach RSA CLAIT standard. If there are appropriate on-job activities and possibly assessment then this could be substantially reduced, although as stated above, such providers may very well want more not less off-the-job CIT training! The exceptions to this may be those who have already made arrangements for a substantial programme of CIT training at the workplace (for example, training in use of viewdata systems by travel agents. Although even here, they are likely to require some complementary off-the-job training. However, as the trainees receive an externally accredited qualification there is a guarantee they have reached a level of competence equal to or above that that could have been achieved in 15 days off-the-job).

Place

A training centre, belonging either to a local authority, a single company, or some form of group training association, was the most popular location for CIT training. Some managing agents had attempted to specialize in the delivery of CIT training, serving not only their trainees but also those of other managing agents and often offering courses to adults as well. However, training workshops, colleges and ITeCs were also utilized, and in some cases the CIT component was delivered as one element of a series of residentials.

The greatest variation in terms of resources related to the training centres. Among those who were most impressive were perhaps unsurprisingly those who undertook a variety of CIT training. Providers who also put on adult programmes often had a greater variety of software and hardware which could be used by the YTS trainees. Staff were likely to be specialists and to have greater experience of applications of CIT. In contrast, those who did their `own' CIT training on an ad-hoc basis were sometimes unsatisfactory [inadequate resources, staff not fully trained in CIT etc.]. The use of peripatetic specialists could be disappointing not only because of a lack of awareness of local context, but also due to quite mundane difficulties associated with the transportation and set up of equipment. Attention should also be drawn to the success of newly constituted training centres, whose whole raison d`etre was to give trainees a thorough grounding in the `new technologies'. The results they achieved with youngsters labelled `low achievers' at school was impressive. [While there were examples of such centres which were very well-resourced, and integrated CIT with other activities to a high degree, a number of less well-endowed training centres also specialized in delivering CIT training to such groups].

Some Training workshops are currently engaged in an attempt to integrate their provision of CIT training with the workshop area skill training, and so provide a parallel development to the provision of CIT skills in schools in a "cross curricular"

fashion. As with the school model, this development has profound implications for staff development strategies (e.g. the role of the CIT co-ordinator in winning the consent and cooperation of the skill trainers) as well as more mundane considerations of the placement and selection of hardware.

The willingness of either ITeCs or colleges to undertake CIT training for YTS trainees from other MAs varied. Whether they wished to run such courses depended upon decisions about course content,levels, age-ranges, utilization of staff and material resources. Some colleges made strenuous efforts to provide CIT courses across the range, and there were opportunities for progression for those interested in CIT onto other full or part-time courses. As with other providers, they had greatest success with groups with similar occupational backgrounds (in the case of those mixed groups, providers complained they were further disadvantaged by the failure of the MA to provide them with any information about occupational and placement backgrounds of the trainees prior to the course starting). Colleges could also be involved with aspects of CIT training for YTS trainees through vocational courses in the off-job component (eg some clerical, retail, and engineering courses, among'others, contain elements of CIT: and this is likely to be an increasing trend).

Those providers which delivered CIT as one element of a series of residentials found their greatest handicap was the restricted time available for CIT in what were invariably busy programmes.

In relation to the site of CIT training, the effectiveness of the training could be related to 3 critical variables:

i. the quality of the trainers - in terms of trained staff. MAs who set up their own facilities often underestimated the ease with which it would be possible to find (and retain) suitable staff in this area.

ii. tutor-trainee ratio - ratios of 1 : 16 or above are taxing even for the most competent tutors.

iii. equipment - insufficient resources (2 or 3 trainees sharing a computer) could also be a major constraint upon what could be achieved.

Just as `outline guidelines' could be attached to recommendations about duration of CIT training, so they could be about the location of such training in terms of staffing and other resources. Again there would be a `let out' if a provider could demonstrate success in terms of achievement of trainees, even with apparent under-resourcing.

Type of MA
The 61 schemes in the sample were sub-divided as follows:

14 general umbrella schemes (typically covering perhaps 5 or 6 different occupational areas)
11 specialist umbrella schemes (covering just 1 or 2 occupational areas eg. road haulage, advertising, clerical/retail, agriculture/horticulture)
11 single company (eg. in engineering, clerical)
6 LCU schemes (eg. brewery, ABTA)
11 workshops (training workshops, local authority or community services - predominantly with premium place youngsters)
4 local authority/county council (with placements in their own departments)
2 training boards (engineering, hotel and catering)
2 ITeCs

Numbers of trainees
The number of trainees covered by the 61 schemes was just in excess of 6,000.

Equipment/trainee
A wide range of equipment was being used by the providers. Some providers allowed trainees access to different types of computer depending upon the tasks undertaken. The `workhorses' were most often a BBC or an Amstrad. However, no one machine held a dominant position. (Although the BBC was attractive especially 2 or 3 years ago because of the range of software available, there has always been a `lobby' arguing that trainees should use business machines and business software. While the less powerful micros had a significant cost advantage there could be room for debate. However, those buying equipment more recently invariably plumped for IBM-compatible machines or Amstrad PCWs. This trend will presumably continue, with a decreasing `rump' still using BBC Bs until suitable educational software is available for the other systems).

The majority of providers had 1 computer per trainee, and often commented that this was essential to maintain interest. Where ratios were in excess of this, it was because of cost rather than educational considerations, although one or two providers thought that for certain activities it was desirable to have 2 trainees/machine.

Some schemes gave trainees access to a wide variety of CIT experiences, being well-equipped for both on and off-job training (some colleges and workshops being particularly well-equipped, as were many large organizations). In contrast those trainees in small placements with little or no usage of CIT (butchers, motor vehicle repair workshops etc.) often also only had a very limited amount of CIT off-job training.

Size of group:
Local programme assessors did not always have this information, but the figures do have some relevance in that the maximum group size was often determined by the number of machines and the machine trainee ratio chosen. 12 schemes operated with typical group sizes of 10 or under. 18 operated with groups of 10-15 (with the median figure 12) and 9 operated with groups of 15-20. The size of the group on its own does not have great significance, because some of these schemes used 2 tutors while others operated with just a single tutor.

Assessment and certification:
This was undoubtedly the key to the quality of CIT training. Without exception, all the `high quality' schemes of CIT training recognised the importance of recording the achievement of trainees in this area. In a few cases, programme assessors were unaware of what schemes did in this area, but the remainder of the schemes could be divided into approximately 3 equal-sized groups.

The first group did not use any external qualification, with perhaps half of these issuing their own certificate, while others did nothing or at most just recorded bare details on the YTS certificate (for example, "has taken part in a 5 day computer literacy course").

In the second group, some trainees could obtain an external certificate if they worked in an `appropriate' area (in practice, this usually meant that they had to have substantial CIT experience on-the-job) or more rarely if they were particularly interested in the area.

The final group sought to enter most of their trainees for an external qualification. These qualifications could either be general or specialist CIT, or else some other vocational qualification which incorporated a substantial CIT component. The qualifications represented in the sample included those from CGLI, RSA, SCOTVEC, AEB, Cambridge Local Syndicate at the general level (although some of these allowed for a degree of specialisation within the qualification) and the first three bodies mentioned in addition produced some specialist CIT qualifications. Specialist CIT qualifications in relation to word processing, operation of viewdata systems etc. and/or those associated with a single industry included those from LCCI, Pitmans, NPTC and ABTA. CGLI, RSA and SCOTVEC also produced vocational qualifications incorporating CIT to a greater or lesser degree.

As a previous report showed, certification in this area has been in turmoil over the last couple of years, with a plethora of new initiatives, pilot schemes and the like. Faced with such difficulties, some schemes relied on issuing their own records of achievement, coupled in some cases with trainees building up a portfolio of their achievements within the CIT area.

However, the situation is much more stable now and if a MA wishes the achievements in CIT of their trainees to be externally accredited, this can almost certainly be accomplished. A future report will deal with the issues of standards in CIT in YTS, and the relationship to the above-mentioned qualifications to the CIT component in a much more comprehensive way. The critical point is that CIT qualifications are of such variety, and some have considerable flexibility such that any pattern and type of CIT experience can be accommodated. The move towards external accreditation would also be in line with policy for two-year YTS, and consonant with the directions being taken by YCB, NCVQ and the examining bodies themselves. This leads to the crunch issue: the reason why some schemes do not try for external accreditation is not because of inappropriateness of the qualifications offered, but rather that the quality of their CIT training is too low and/or the duration of such training is too short!

Insistence upon some form of external accreditation for CIT could therefore be a means of improving greatly the quality of provision offered to trainees. It has other attractions, not least the simplicity with which progress could be monitored; any attempt to look in detail at the content of the schemes would require a degree of specialist expertise from the monitors which it is unrealistic to expect to be common (this applies to area or regional staff, but also perhaps to the TSAS). However, if the focus was on outcomes - these would be a matter of public record. Are there any possible drawbacks to such a scheme; what if the trainees do not consider CIT training to be relevant? What if the trainees experiences cannot easily be fitted into the existing pattern of qualifications? Let`s take each of these objections in turn.

Firstly, the question of relevance; it has been our experience that the vast majority of trainees do see CIT training as relevant to them (they often adopt a wider conception of relevance than some placement providers; they see it as relevant to their lives both outside work and at work, if not now then possibly some time in the future). In addition, they often find it interesting in its own right (as demonstrated by their willingness to continue in their `free time'. These are not isolated instances, but are widely reported. Indeed one group of trainees was clearly disgruntled when a researcher kept their tutor busy talking right through the lunch-break, with the result that they could not get an early start on their machines in the afternoon!) Often the only `basis' to the charge of irrelevance is if the claimant looks neither to the future nor past the confines of one particular industry (or even one sub-section of it!)

The second situation could arise if a trainee's CIT on-job experience went far beyond levels of achievement associated with the above-mentioned qualifications. (For example, there was a case where a trainee took a major responsibility for many aspects

of the implementation of a computer-based information system to replace the existing department's individual manual record-keeping systems. The work involved her in making decisions about content and number of fields, type of access required by different departments etc. The trainee was given several months intensive training, but then the detail of implementation over the next 8 months devolved to her). However, besides being relatively rare (but not totally exceptional as some adults are willing to pass on responsibilities for activities with a CIT base to quite junior members in conventional hierarchical terms) it is also quite easy to accommodate, in that documentation about what she had achieved in a profile/record of achievement would itself be quite impressive. [It is perhaps noteworthy that problems of recognition of this work-based learning could occur if the trainee switched to full-time education. For example, the type of responsibilities undertaken by the trainee were remarkably similar to the type of duties a student with a BTEC Higher diploma in Business IT could be expected to undertake upon entry into industry upon completion of their course. Yet a number of course tutors admitted they had no provision for recognition of prior experience and/or work-based learning. This was, however, a new course for which guidelines were only finalized in 1986 - so it does show that problems with progression and recognition of work-based learning are very real. Let's hope the NCVQ have a significant impact in this area].

Course content:
Some programme assessors were not always in possession of this type of detail, whereas others were able to provide full details. The most commonly occurring areas were word processing, spreadsheets (often looking at wages or some aspect of accounting) and information retrieval through use of databases (stock control being a popular application). Some courses also gave a brief introduction to programming (although this was often "para-programming" or a very simple introduction to ideas of structured, sequential processing: BASIC was often used, but LOGO seemed to be gaining in popularity). A range of other activities were also undertaken by different providers. These related to the following: robotics/control (CAD/CAM projects involved garment design as well as engineering); viewdata systems (sometimes through use of emulations); graphics; use of sensors; simulations and games (sometimes these were business games, although occasionally access to games was used as a reward for performance in other areas). Some schemes also utilized visits, for example to computerized warehouses, to augment their programmes. In some instances trainees were allowed to choose their own modules, but generally the scope given to trainees to follow their own interests varied, although project work in particular often allowed a degree of flexibility.

Possibility of variation in course content:
There was a wide disparity between schemes as to how ready they were to accommodate differences in trainees experience, interests and/or occupational or placement background. Where groups had

similar occupational backgrounds, it should have proved relatively easy to `tailor' any provision accordingly, although this was not always done in practice. There was less attention paid to the need to accommodate trainees prior CIT experience: the most alarming case being where a trainee repeated a course she had previously successfully completed at school.

Trainer Support

Tutors responsible for the CIT training were usually either specialist computer tutors or had a background in other areas of vocational education and training, with an interest in CIT. In some places tutors genuinely had double competence (extensive knowledge and experience of a particular occupation/industry and expertise in CIT). However, development of such double competence is unlikely to be spontaneous and so the quality of support offered to trainers becomes critical.

Specialist computer tutors were sometimes working in complete isolation from what was happening in the rest of the scheme. Their responses to this (and sometimes their preference) was often to run largely self-contained courses. However, there was seldom, with a few notable exceptions, any support/training available as to how they might integrate their provision with the rest of the scheme. Indeed a number of tutors, who had been interested in further training, had found that provision at accredited centres and elsewhere was most likely to be of too general a nature. There were some examples of accredited centres using tutors to spread "good practice" for example in London, Dudley and Kent, but our experience of working with accredited centres to facilitate the development of local networks for CIT support have been most encouraging. The contexts, problems and approaches to CIT vary so widely, that an expert-led approach will often be inappropriate, whereas within the support networks there was a mixture of expertise and experience which proved complementary. The mutual support and encouragement they could offer one another was also highly valued. [Note subsequent reports will deal with this issues in greater depth].

Where supervisors or tutors had a background which did not include any CIT experience, but were now expected to deal with trainees who had some such experience, then a different set of problems has to be faced. Accredited centres have found that CIT awareness courses for all types of staff have continued to be popular and are therefore run periodically. While this may result in adult staff feeling " not left behind", this training seldom results (nor is it intended to) in staff feeling confident enough to supervise trainees in work with a substantial CIT content. A number of organizations, notably training workshops, have tried to give all supervisory staff a fuller training in CIT such that trainees would come into contact with and use CIT in different departments/sections throughout the year, rather than associating CIT with a `special' time, place and section. While this has proved highly successful in some cases (for example in a

workshop in Leeds) in others there have been difficulties in trying to get supervisors to develop double competence. The problems are sometimes bound up with status and self-identity: the supervisors may feel that they have insufficient expertise in CIT and that to work in this area with trainees would mean that the roles of "teacher-learner" which are so clear in their specialist area are much hazier here. Indeed not only may the relationship be more one of "learner-learner", but in some cases the roles may actually be effectively reversed. The anxiety this may cause should not be underestimated, and it does mean that the development of double competence (and confidence!) may be a lengthy process. [This process can be considerably shortened, if it is possible to utilize applications of CIT which help the supervisor in his/her role. Their perceptions of CIT and themselves may then start to change].

While the ideal of tutors/supervisors with double competence has been realized in a few cases, it is apparent that more extensive trainer support is required. There have been examples of in-house staff development where there is a gradual spread of expertise about CIT throughout the organization, or at least among those directly concerned with training (one particularly effective means of achieving this is by "shadowing"; that is, where an inexperienced member of staff `sits in' and gradually offers increasing assistance to the CIT tutor during sessions with the trainees). However, many other schemes seem unduly dependent upon a single individual within the organization, or else "contract out" or "buy in" outside staff for CIT and then "leave it to them". Such practices may be short-sighted in that without some institutionalization of `good practice' in CIT within the organization, any progress made may be hazarded by a simple change of circumstances; someone leaves, there is a change of provider etc.

Competence-based Objectives:
The design of two-year YTS included a requirement that the proposed outcomes should be expressed as competence-based objectives. This represented a major change of policy, and it is clear that at the time of the survey (1986) both managing agents and area offices were struggling to come to terms with what was required in terms of the specification of competence objectives. There were major differences in understanding and interpretations. Some guidelines were produced for occupational areas in the form of illustrative and model schemes, but where these mentioned CIT, it was often only at a very general level- trainees should achieve competence in using CIT applications "appropriate to their industry" or achieve "basic skills in computing". However, even allowing for the paucity of guidelines in relation to CIT, descriptions of competences to be developed in CIT were often vague or non-existent. The detail of the CIT component in the scheme submission sometimes consisted simply of a statement of the place where the CIT training would take place and its duration.

There were, however, examples of development of modules with clearly specified objectives for CIT. These were likely to be based upon the work of RSA, CGLI or SCOTVEC, but some schemes had clearly given considerable thought as to how these applied to their particular circumstances. In some cases there was an over-reliance on descriptors such as `describe', `be aware of' etc. rather than more active statements of competence, but at least they were starting to think in terms of outcomes other than inputs ("will undertake a 5 day computer literacy course").

The decisive factor in explaining the variation in awareness and use of competence objectives for CIT was the influence of MSC officials. Whether regional and/or area policy was that competences in this area should be specified was the key factor (or more precisely whether this was implemented `on the ground'). Why did not all programme assessors ask for such specification? As so often with CIT, it appeared partly a matter of **confidence**; some staff were reluctant to engage in discussions with scheme designers because they were aware of the limitations of their own knowledge in this area. Indeed in the absence of more specific guidelines **to them**, they were acutely conscious that they would be unable to respond to simple requests such as "Well what should I put? What would be acceptable?"

On-job opportunities for CIT:
This could be categorized into three distinct types:

i. use of CIT on-job was extensive and trainees had access (for example; breweries and travel agents)

ii. CIT often present but trainees had little or no access (for example; farms, department stores)

iii. little use of CIT on-job (for example; community care, small motor vehicle repair workshops).

The situation is further complicated by umbrella schemes, where on-job experience is dependent upon the placement. There was one scheme which had sought to counter the effect of such contingencies by using modules which could be delivered either on or off-job, supplemented by project work.

Whether trainees had access to on-job opportunities for CIT depended as much on how and by whom the CIT was used as upon whether the trainees could perform useful tasks using CIT. Thus in some instances use of CIT equipment was seen primarily as a management tool (farms) or as a responsibility of supervisory staff (ordering and production of invoices and receipts in a tyre and exhaust repair workshop). In such cases, use of CIT by trainees would need a rethinking of applications of CIT (for example, to include record-keeping on farms) and/or a reconsideration of the division of duties and responsibilities in the workshop. It should be remembered that use of `special'

and/or `expensive' equipment may be seen as a reflection of status as much as an aid to carrying out particular tasks.

Notwithstanding such "hiccoughs" however, the use of CIT on-job by trainees is rapidly increasing. Stock control, word processing, inputting data for accounts, use of CNC machinery and EPOS, and information retrieval from databases are all increasingly common. One particularly neat illustration of the value of CIT training for trainees related to electrical retail suppliers. Once trainees had completed their off-job training they were often regarded as the `experts' when they returned to their local shops. This meant not only did they use, and help others use, CIT for ordering and checking availability of stock etc. but they were also used to explain the benefits of, and/or operation of, microprocessor-controlled electrical goods to customers. The trainees apparently relished their role as the "givers" rather than the "recipients" of advice (this provides an interesting rejoinder to those who see trainees as knowing more than adults as a "problem" - it can be part of the solution!)

Other comment:

- there is a need for greater specification of guidelines for CIT in relation to the lead industry body outline for schemes.

- tailoring and adaptation of CIT provision to take account of individual experience and type of placement is feasible and does occur.

- sometimes the CIT training is satisfactory but the recording of experience and achievement is insufficient to reflect what has been achieved.

- tutors would welcome more `pressure' from MSC about what is required in CIT. They feel this would give them greater leverage within their schemes to improve the quality of training provision in CIT.

- the priority for MSC should be to get proposals and guidelines about certification and competence in CIT. Then in order to deliver performance in this area adequate staffing and other resources will be required. Focus upon outcomes is much easier to achieve and to check, than is trying to monitor adequacy of group size, equipment and other facilities.

- trainees may do some elements of CIT in other (college/training centre) courses; most notably, in clerical, retail and engineering.

- mini "computer studies" courses have withered naturally, and even where schemes do overemphasise programming this is now likely to be more a matter of degree rather than fundamental orientation. That is, focus upon programming is more likely

to be seeking to develop competence at the level of `para-programming' and/or an understanding of the structured sequential nature of programs rather than seriously trying to develop the ability to program.

C **Work with Accredited centres**

More detailed contact with managing agents and CIT providers came through links with accredited centres (In particular those at Lancashire, Cheshire and West Wales.) Although much of our work with accredited centres relates more to the "good practice" and "feedback" components of the project, nevertheless some insight can be gained about "what is happening in CIT in YTS". However, there is a major caveat which should be borne in mind before scrutinizing findings from this source: that is, all the respondents were responding to an express invitation to become involved with the Project on a local basis (including possible participation in network meetings), hence they may be more interested in CIT and staff development for CIT than other schemes.

The material from the providers in Lancashire was worked into a similar format to that of the Area Office survey - thus supplying coverage of the missing region.

The CIT working group in Lancashire is working with other groups of providers (eg LAMA : Lancashire Association of Managing Agents) to try to establish a "common core" for CIT in YTS, to provide a forum for the discussion of useful programs, computer-based learning materials and the suitability of different types of CIT certification.

There was substantial contact with providers in Cheshire. Their main concern was the development of a working group to meet to discuss CIT issues. The group, based on the accredited centre were particularly interested in the dissemination of good practice. They intended to survey in detail the provision of CIT training in their area.

We have had several fruitful meetings with MSC and accredited centre staff in the Leicester and Northampton area, particularly in connection with their Local Quality Initiative which aims to provide schemes with an offline PRESTEL type database of workbased project ideas for schemes. The working group here reason that more appropriate CIT training would result if the imagination of trainers (and trainees) were stimulated by ideas from this database.

Other contacts with accredited centres include; the Coventry Management and Training Group (Coventry and Warwickshire AC) who have done some particularly interesting work with CNC in their CIT, and Dudley and Sandwell who have developed a process for auditing the training and management skills in a training organisation using accreditation profiles (unfortunately the

skills audit process has not been extended to cover the CIT area).

In the Southern Counties AC (Portsmouth Polytechnic) we have co-operated with local providers to investigate self-help support networks based around a common interest in CIT. (In this case the development of a "user group" who all use the same computers and software for scheme management and administration.) In a similar line we have also contacted various computer "user groups" (National Computer Users in Agricultural Education, YTS trainers computer user group) with particular reference to the dissemination of good practice and training materials.

The most intensive work, however, has been carried out (by Moira Turner, one of our consultants) in association with the West Wales Accredited Training Centre. An edited report is given in Appendix 3.

D **Survey of practice in Training Workshop Schemes.**

Training workshop schemes traditionally draw a high proportion of premium trainees, who prosper in a more structured environment where they can develop skills at their own pace until the time comes when they are confident enough to face the rigours of a work placement. Considerations of the special needs of the trainees must put particular demands on the types of learning strategies that are available to trainers, strategies that we hoped would be highlighted by our survey of CIT practices in Training Workshops.

The survey of workshop schemes was initially intended to provide information for a future report (on "Dissemination of good practice") but some of the observations and comments from the trainers involved are relevant here. The survey contained two elements.

Firstly, visits to Training workshops identified as sites of "good practice" by the Applied Computer Literacy pilot project. An edited report is given in Appendix 4 so as to give an idea of the learning strategies that are **possible** in these schemes.

Secondly, a continuing series of visits to some of the schemes that make up a national chain of training workshops. The main outcomes from this survey will again be more relevant to later reports on good practice and dissemination but an edited report is also given in Appendix 4.

E **Developments in YTS/CIT courses.**

The section that follows is a brief analysis of some of the observed developments in CIT courses. The observations, made over several months, were based upon the practice and reported practice of training in YTS/CIT. These observations do not include consideration of specialist courses in Itecs, where much

more course-time is devoted to CIT. The intention of the observations is to represent objectives and methods that the providers considered to be reasonable and practical for YTS/CIT courses. Some comments have also been made about significant omissions from CIT practice and also practitioners ideas for future developments. Some schemes, which have been observed and reported on in this report, have well developed CIT provision, but it should be emphasised that these comments are to give readers a feel for "what is happening in CIT in YTS". They are **not** over recommendations for "good practice", which will be the subject of a later report.

1) **Overall reasons for having CIT training in YTS.**
It has been observed (by PAs, Accredited Centres etc) that one of the major difficulties faced by some schemes is the lack of a clear idea of what CIT training in YTS is **for.** Some schemes quite openly admit that they provide only that minimum of CIT training needed to meet MSC requirements. They see no relevance to their trainees in CIT. One frequent comment is that the trainees are of such low ability that they will "never" have to use CIT in **this** industry. If computers **are** used, it will only be by clerical or administrative staff.

Many other schemes, in a wide variety of industries, have a clear idea of the future need, for flexible, CIT "literate" personnel.

Some objectives for CIT suggested by providers are as follows:

a) To reinforce the other YTS "Core Skills": ie number, communication, problem solving and practical skills. Indeed there is a clear overlap in that any "useful" task using the computer would involve the exercise and development of these core skills.

Some schemes operate a training programme that allows trainees with special difficulties in Core Skills to move to a parallel programme geared to communications and number development. (This has been mainly observed in Workshop Schemes but is probably more general than this.)

b) To develop skills that are **known** to be necessary for the employees in an industry. Many clerical schemes (for example, travel agency, retail etc) are working in this way. This training has the most chance of being performed "on the job".

In addition to training for known skills some industries do produce training plans that include "probable future trends" in CIT, but it would in any

case, seem wise to provide a grounding in a variety of applications. The choice of applications areas presents problems; for example, is robotic control relevant for retail trainees? Will some large stores use them in the future in the stockroom, or to "deliver" goods to the shop floor?

c) To introduce trainees to the ways in which a company works. For example, some companies have CBT material illustrating the way their production processes operate.

Many schemes would include discussion of items like wage slips, stock control and many other similar examples in their more general "vocational" training, usually done in isolation from the provision of CIT.

Gaining experience of a diversity of tasks including a variety of CIT applications is of particular significance to trainees likely to work in small businesses (or be self employed).

This "Enterprise training" element of vocational training could be profitably developed within a CIT framework. The development of "Enterprise training" is thought to be of such great importance, that it has been developed as part of most of the vocational initiatives: TVEI (eg "Whole Business modules") and CPVE ("Mini Enterprise") as well as its use in many ITeCs and YTS schemes as a learning vector as well as a source of income.

2) **Practical skills applied to computers**

Most schemes see the need for trainees to use computers in a practical way though it has been suggested by some schemes that a series of video tapes coupled with a programme of visits would be more beneficial than their existing provision. Some schemes "pad out" expensive CIT training with work on projects **about** computers, generally delivered by trainers who are not notably computer literate themselves and without practical use of computers.

In the early years of "Computer Literacy" in YTS the use of a computer keyboard was seen as the major practical skill. Trainees spent an inordinate time (sometimes several hours) using "typing tutor" programs. Keyboard familiarity may be a necessary prerequisite to other activities, but care is needed to "balance" CIT activities.

One practical skill that is often neglected is the skill of "paying attention to what is happening on the computer screen". Many trainees get so involved in the process of finding the letters on the keyboard that they ignore what is

happening on the screen. (This has been particularly reported in the use of Computer Based Learning programs.)

Many schemes now have a section devoted to the safe handling of floppy discs and other magnetic media. However, few discs are ruined by trainees on purpose, although some are lost through clumsiness. This only becomes a problem if the trainer has failed to follow an adequate backup procedure. The worst offenders of the "safe handling" rules are often the CIT tutors themselves.

Some schemes have a section devoted to "health and safety" aspects of CIT, as well as the impact of CIT on society. These are usually presented in the form of lectures or directed discussions, and rarely as practical projects.

Another development concerns the use of a variety of printers. Some schemes require wordprocessing exercises to be submitted in a "proof" stage and a NLQ or "Letter Quality" stage. Others only **demonstrate** changing ribbons and daisywheels, although many more require trainees to change the paper in a continuous feed printer, or to put in sheets to a "sheet feed". Few schemes have an exercise based on the use of address labels.

Putting computer systems together by fitting plugs into sockets is often a practical feature of CIT courses. The penalties for this activity are often excessive wear and tear on the computers themselves and leads and cables with intermittent faults.

3) **Use of operating systems**

Many schemes cover the simple operating system commands. This would include things like "display a list of the files on this disc", "copy this file to another disc", "load and run this program" "load BASIC and then load and run this program").

Others cover the more dangerous commands ("delete everything on this disc and re-format it", "delete everything on this disc and copy another disc on to it" "delete this file" "rename this file"). This approach has dangers in that the trainee is given knowledge of commands that can potentially destroy valuable data (possibly at the trainee's place of work). Few schemes seem to introduce the trainees to any "safety precautions" (e.g. when formatting "first make sure the disc is inserted properly, try to call up a list of the files on this disc, if all you get is an error message, then carry on and format it: if you do get a list of files, then check with the boss that this disc is O.K. to format").

The consideration of the damage that may be done has caused some placement supervisors to become disillusioned with the possibility of the trainees gaining CIT competence "on the job" (comment from a PA), particularly if the trainee may inadvertently reformat the company hard disc system, or "lose" valuable consignments of stock by recording the wrong stock number or location.

The less common operating system commands, for example those to do with the setting up of tree structures in the list of files, setting up "batch command" processing files etc have rarely been observed in normal (non-Itec) YTS/CIT.

The schemes that use networked computers generally cover the implications of these well but some trainers have questioned whether or not the use of networks leads to a consequent lack of the **practical** use of discs and printers.

One or two schemes are planning to deal with operating systems purely from an "icon driven" (intuitive) approach (Gem, Windows and others) as a means of providing a "more friendly" operating system. Roughly speaking, in this system you move a cursor around with a "mouse" so as to "point" at a picture (icon) representing the particular option you want. They reason that all operating systems will work in this way in the future, in conjunction with more memory and faster clock rates.

4) **Programming**

Some schemes devote a lot of time to writing programs in BASIC. (Some as much as three out of five days, others four out of four, a large retail scheme with five out of ten days). Some of them produce clearly thought out training plans to take the trainees through various levels of programming.

Most of them get through PRINT, PRINT TAB( ), INPUT, GOTO, FOR .. NEXT, IF THEN,GOSUB RETURN. Some get as far as "String" operations ie working with words and letters. Some schemes introduce the syntax of commands without explaining their meaning or utility. (eg The trainees know how to **code** subroutines but they do not know why or when they might provide better solutions to a processing problem.)

Many schemes concentrate on the commands that produce colour and graphic effects. "Industrial relevance" is introduced via the topic of the program to be written. Sometimes thought is given to the **design** and **problem solving** process inherent in a programming exercise.

A small, but increasing, number of schemes are using LOGO as an alternative to BASIC. This is seen by some of them as representing a "control" process. Results can be obtained

by trying each "command" as it is typed in, and the language provides easy access to graphics and colour.

Some people would argue that programming is not a reasonable activity for YTS trainees because it is not something that they would ever be required to do. The numerical programs (a typical example would be to write a program to calculate the maximum drill speed for a particular material and hole size) could be handled more easily using spreadsheet programs. The "display" programs (here a common example would be to design a program that will act as a colourful window display for a shop) aspects could be better done with CAD programs.

Others remark that it is important for the trainees to get an idea of how the computer **works** and that this is a chance for them to exercise problem solving skills. Careful thought should be given to the reasons to introduce anything other than `paraprogramming', especially as many concepts of programming can be introduced by the development of "macros" for the major applications programs.

5) **Computer aided design.**

This area, if present, was almost always related to a "craft" context for example, to produce "blueprint" type drawings or perhaps maps.

Some schemes have provision for model CNC lathes, milling machines etc. There would be a temptation for training providers to justify the cost of this expensive equipment by using it with **all** of the trainees (commented by several managers who use Itecs) whether the exercise is directly relevant or not. However, it could be argued that an awareness of modern production techniques would probably be valuable to many trainees: it could help to put the use of IT in a wider context.

The advent of "desk top publishing" has also made an impact (the Macintosh "industry standard" system for this has been available for over a year, the IBM compatible versions are available, as are products that emulate this process on, for example, the BBC B and Amstrad PCW. Applications could have been utilized in the CIT training of (eg) Retail, Catering, Hotel trainees to produce advertising material, menus, brochures, and posters, where the computer is aiding graphic design.

Projects of this nature could be used to develop design and planning skills as well as providing a link with work done in wordprocessing.

Other programs exist that develop CAD in areas such as weaving, knitted garments, shoes etc, some exist for the

composition of music and others for the layout of electronic circuits.

The CAD area is also one in which trainees have the opportunity to use their creativity, a factor which is exploited to good effect in some schemes but completely ignored or squandered in others.

6) **Wordprocessing**

This element is present for most of the schemes. Most schemes cause their trainees to produce a letter of application and/or a CV. This is **all** that some schemes do in this topic.

Many schemes rely on the trainees to type in documents, rather than providing them with documents that have to be edited. Using pre-prepared documents is a major factor in increasing the "productivity" of trainees as many of them have poor keyboard skills. (Some trainers say that another major advantage is that they are being required to search information on the computer screen looking for "errors", developing skill at proofreading.)

This is an area which can usefully be linked with literacy skills provided that both literacy and the skills involved in word processing are each seen as being important in their own right.

7) **Dataprocessing**

Many schemes cover this topic by getting the trainees to create files of information by typing in information of their own choice or collected from their work place. This is often in conjunction with a package (such as dBase) that has to be "programmed".

Some trainers point out that a major disadvantage of this process is that important "database" skills are often diluted by the amount of time spent on typing and programming. Another perceived disadvantage of this process is that the design of a database for a particular application is usually a very complex process, involving much thought and analysis of exactly how the data will be used.

Comparatively few schemes use ready made extensive datafiles for developing in their trainees an understanding of the "transactions" involved in using a datafile **before** tackling the difficult task of setting up a datasystem (however the Pitman Data Processing Certificate tests competence in the use of such ready-made data files). Many trainers (from Itecs in particular) comment that very few trainees will be consulted about the design of the database that their

employer might use or install. They are, however, all likely to work for a company that keeps some data on a computer system.

Few schemes include tasks that cause the trainees to search the data on complicated criteria (ie with several clauses or over several key fields.)

One of the few things that most trainers agree on is that, in the **future**, everybody will need to be able to interrogate an information system and to make sensible decisions on a basis of the answers. (Contrast this with the **present** situation in France and Canada where to save printing costs and to make a system that can reflect changes quickly, telephone directory information is stored on a computer information system which, in an increasing number of areas is being supplied directly to the customer complete with free terminal, although book directories are still available **for the moment.**)

8) **Communications and Electronic mail**

It would be expensive for schemes to provide trainees with much practical experience of using live PRESTEL or Telecom Gold. (However one scheme reported spending £400 on PRESTEL charges alone.) Schemes often just demonstrate these systems, usually limiting the discussion of them to the details of moving from page to page, rather than developing competence in setting up search strategies.

It is possible to set up a disc based simulation of, for example, pages from a PRESTEL type database on some microcomputers. (BBC B Communitel, Rotaview, Beebtel and others.) Setting these up is quite a time consuming task, so many schemes just used the demonstration data accompanying the program. Others let the trainees design single pages.

Many companies have their own "in house" closed PRESTEL type databases, often concerned with stock or internal information which could be used for CIT training. Others, like Healthdata, are available as services to the public.

Designing an information structure (like PRESTEL) is another complicated task requiring a clear idea of the uses of the system once put together. This is seen as a feasible group project once all of the trainees have a clear idea of the tree structure of these "page oriented" information systems.

Most computers that have a "serial interface" can be joined together with a suitable cable. These then can be used, with suitable terminal software, to **simulate** an electronic mail system. Electronic mail oriented systems (eg Telecom Gold) have the disadvantage that the screen layout and contents are generally quite dull.

9) **Spreadsheet applications**

Many schemes that use spreadsheets cause the trainees to design their own. (This is not thought to be too bad a task, but can be a very difficult one for trainees who have problems with algebra.)

A few schemes provide ready designed spreadsheets for the trainees to type in data (pre-prepared or collected), though many example spreadsheets are available. Spreadsheets can be used for any planning task that contains a costing or analytical element. Most business software of this type has a section concerned with the production of graphs from data, which allows data to be produced and analysed in a pictorial form.

A perceived advantage of pre-prepared data and spreadsheets allow the evaluation of the accuracy of the trainees work. (Several PAs have commented that most employers would prefer their potential employees to be capable of entering numbers accurately.)

In business, most spreadsheet applications result in an array of numbers that have to be examined and some form of conclusion or diagnosis extracted. It is quite rare for this facet of spreadsheet application to be highly developed in exercises in YTS/CIT. Some trainers have commented that "decision making" from data is a job for management class personnel and ought not to be considered for YTS trainees. It is simply unrealistic to cover such applications prematurely.

F **Some concluding comments about "what is happening in CIT in YTS"**

- some schemes are doing very little in CIT in YTS: uninspired and uninspiring.
- attempts to use an external qualification could often be seen as a touchstone of seriousness of intent about CIT.
- indeed a threefold classification could perhaps be drawn up of the CIT in schemes:

  CIT "substantial": used on-job with complementary training , imaginative off-job component, externally-accredited qualification.

  CIT "moderate": well-organised, clear objectives, competences, end-products (portfolio, record of work completed) but perhaps only lasts 5 days. Would include some attempt at "tailoring".

CIT "weak": less than 5 days, poorly organised, standard package (no "tailoring"); achievement likely to be "attended CIT course"! Just "time-serving"; scheme submission documents reveal little or no evidence of thought about CIT.

- schemes were often disappointed with the offerings of colleges 2 or 3 years ago (often just "mini-computer studies" course). However, there is evidence of extensive changes since then (in terms of facilities, staff development, appearance of CIT in other off-job provision etc). Some attempts at "tailoring", although this is easier on a vocationally-grouped basis (e.g. trainees all from similar placements: clerical, agricultural, travel agents etc)

- recognition of prior experience: seldom occurs, but there were some isolated instances.

- record of experience (portfolio): if this were required it would make CIT provision a matter of **public** record.
(Centres which do this, can produce impressive examples of trainees work (projects etc). Compare this to those places who just issue "has attended a 5 day course"!)

- need for improved arrangements for setting competence-based objectives, standards and methods of assessment.

Appendix 1: Area Survey Matrix

	Time	Place	M.A.	Any variation	No.	Group Size	Equipment: Trainee	Assessment and Certification	Course Content
11	10 days	Training Centre	Umbrella	No	150	8-10	1 : 1	Only exceptionally as a profile statement on YTS cert.	Discrete 'old' skills learning **about** CIT; programming; little on applications (no attempt to relate to workplace)
15	5 days off job + substantial on-job	Training Centre (within regional office)	Brewery (LCU)	Yes, according to individual training programme	15 local	-	well-equipped on & off-job	CGLI or RSA as appropriate	Detail not known (need to approach nationally or regionally), but considered to be very good.
16	5 days off job + on-job training on viewdata	College	ABTA (LCU)		4 local	-	well-equipped on and off-job	ABTA NTB Prestel competency Certificate	Heavy emphasis on viewdata systems: college is used as an induction and also for reinforcement prior to competency test.
22	Varies 2-4 weeks (in 1 week blocks) + on-job	Training Centre (used by other MAs)	Umbrella just retail and clerical	Substantial according to placement, experience & interest	240	10-14	1 : 1 (well-equipped, 'incredible' range of software)	AEB Computer awareness; LCCI word processing; RSA Vocational Preparation	Week 3 on CIT of 4 week induction, subsequently will specialize in either clerical or retail applications (eg. stock control; EPOS) for up to a further 3 weeks. Trainees can select own modules. Keyboard skills taught separately from CIT component

	Trainer Support	Competence-based Objectives	On-job opportunities for CIT	Other Comment	Other Information available
11	Advice from AC: but no training	Wide range included in general template (eg. computer-based accounting) - strike out those which do not apply	May or may not have access to CIT at workplace	Little thought about certification, integration prior experience, work-based learning - just give standard package (no pressure from Area Office - considers this scheme as very good!)	Details of content, objectives, modules and packages available.
15	Computer training rooms at 6 regional offices	"(CIT) now in use in most WE locations. Familiarize themselves with those systems". Yes, but often expressed in knowledge terms.	Varies according to location & individualized training programmes, but CIT on-job will be incorporated, sometimes to a substantial extent	Training generally, including CIT, is taken seriously. Tailoring and adaptation can and does occur	Administration, competence objectives, modules given in detail. CIT prevalent in most modules. CIT competence objectives specified in detail.
16	-	-	Experience of viewdata to complement college training: use is made of ABTA NTB Prestel self-study package + 18 "hands-on" sessions. Micros often also in use	Training considered OK, but recording of trainees progress not systematic (expectation of job in industry)	Details of CIT available in work experience. Contact ABTA NTB and ABTA Project.
22	Specialist computer tutor, plus a 'shadow' who is there some of the time. Manager is very enthusiastic, also makes an input. Run a trainer computer awareness course for local Accredited Centre. Has co-operated with other training centres.	Yes within modules (computer operating, word processing, data-base management, spread-sheets, graphics)	Modules can be delivered either on or off-job. Variations between placements	High quality. Very flexible (can cope with prior CIT experience by use of more advanced software - although this is rarely necessary), adaptable according to interest, desire for a qualification etc.	Details of modules and competence objectives available. Visit to scheme to be arranged.

	Time	Place	M.A.	Any Variation	No.	Groups	Equipment: Trainee	Assessment and Certification	Course Content
31	Mostly 5 days (some 10 days) off job with relatively little on-job	Training Centre (Used by other MAs)	Umbrella (spread from clerical to engineering)	Yes: core but some tailoring for different groups and individuals according to needs & capabilities	300	14-16	1 : 2 (Amstrads)	No: just 'has attended (and successfully completed) CL	Introduction, stock control, payroll, spreadsheets, DBs, WP, invoicing etc. Use of logo. Access to business software seen as important. Some time is given for trainees to follow own interests (Logo, WP, programming if they have done this previously). Clerical trainees only will receive an extra 5 days in Year 2: mainly WP.
42	2 week blocks	Training Centre	Umbrella (Engineering Clerical and Retail)	2 strands but routes through basic course can be individualized	209	12	1 : 1 (very wide range of software; work sheets etc.)	Theoretically would be eligible for SCOTVEC, but could not face paperwork necessary for a body other than a college to be approved! (but PA has been stressing importance of certification)	All do basic course (very good for those with little previous experience), but engineers also get an awareness of CAD/CAM Range of simple programs & accompanying worksheets are available. Would write just one simple program: games are also available.
43	3 weeks	Training Centre	Umbrella (leisure)	Adapted to trainees particular situation	50	up to 12	1 : 1	Hassles with SCOTVEC (see 42) hence may opt opt for RSA	Use of simulations (greenkeeping; sports grounds; riding schools; golf shops etc.

	Trainer Support	Competence-based Objectives	On-job opportunities for CIT	Other Comment	Other Information available
31	Specialist computer tutors: have attended general AC courses, but AC has not offered any support in CIT area	No: only details of CL course are given	Some limited opportities for CAD & CNC WP or use of DBs (Tutor comment: until trainees do the course they often do not have a conceptual framework about what they are doing, cannot appreciate links etc.) Perhaps only 6 or 7 trainees would use CIT to any degree: eg. inputting data for accounts; stock control etc.	Previously ran a specialist `computing' option within YTS (virtually all off-job was CIT) numbers insufficient this year. Deliver CG444 for adults in IT. Committed, imaginative tutors but constraints of time, size of group would rule out ability to deliver RSA CLAIT (may use this within adult education). Write and adapt own teaching programs. (note when delivering to industry have a maximum group size of 8) whereas with YTS just one tutor to 14-16 with occasional part-time support. Appreciates there are potentially opportunities for use of viewdata, control etc.. but "pressure" would be required from MSC to go beyond this bare minimum.	Details of visit to scheme, of CL course and type of detailed support material given to trainees.
42	Trainers have attended AC courses: also run management and adult courses. Make use of graphics and control but seldom use these with trainees to any great extent.	-	Little or no contact with supervisors or placements, hence any links very `hit and miss'. Clerical trainees most likely to use CIT on-job	Engineering trainees may additionally do elements of CIT within their college courses	
43	MA (who is CIT tutor) a real enthusiast	-	Even where is no CIT on-job, emphasis on practical applications means trainees can make clear links with what they are doing and may do in the future	Tutor (MA)s enthusiasm evident and is transmitted to trainees: CIT course is very popular	Candidate for a visit

	Time	Place	M.A.	Any Variation	No. Groups	Equipment: Trainee	Assessment and Certification	Course Content
52	2 weeks + 1 or 2 weeks	College Training Centre	EITB Training Centre (engineering)	Yes: for example, if technician	94 -	1 : 1	Possibility of RSA CLAIT (although college considers would require 3 weeks for this) or Cambridge local syndicate	RSA CLAIT areas; also 1 week CNC machinery; technicians would do projects on CAD
55	3 weeks + on-job	College	Single company (clerical)	Basically same, although could move on to more advanced competence objectives	40 -	-	RSA CLAIT (previous 2 week course considered OK, but company wanted the external qualificiations) will also do BTEC First Award in second year.	coverage of RSA CLAIT areas
57	5 days + further on- and off-job (varies)	College	Advertising Agency Consortium	Single occupational area, but college splits group according to previous experience	25 -	-	-	Introduction but slanted to use of IT in the media; to some extent use of CIT also covered in standard college courses.

	Trainer Support	Competence-based Objectives	On-job opportunities for CIT	Other Comment	Other information available
52	Specialist tutors: able to provide training for other MAs, facilities such that could be used for adult training etc.	previously knowledge-based (appreciate, be aware of, understand etc.) - now just details CLAIT areas	will vary with placement (2nd year)	Had originally run `computer-science' type courses: not well received by trainees. (area office try to discourage such approaches).	Was one of the RSA CLAIT pilot centres. Content of old and new courses.
55	-	within RSA scheme: also using `blue book' record sheets as part of in-company assessment (ie use of CIT in work placement)	Extensive use of CIT in workplaces (nat. HQ of large chain of retail shops). Trainees will use computers in every dept. although type of usage will vary greatly from data retrieval for telephone credit-rating enquiries to use of models, spread sheets etc. in finance.	Trainees invariably taken on by company; any particular interest in CIT can be accommodated by choice of placements; encouragement to take further training which could include further work in CIT. Trainees have up to 5 placements, keyboard skills taught throughout year separately.	Details of visit to scheme. Company has a large IT base, and sees flexibility and use of CIT as fundamental for employees.
57	-	No - not for CIT	Computers may be used on graphics and design in ads. and some trainees may get access, similarly may or may not get access to business micros	An area where much less CIT is given than would seem appropriate, especially given CITs obvious rapidly increas-ingly influence in this field. However, MA considers can`t afford to increase CIT off-job, can`t afford to decrease `trade' component of off-job (apparently no thought of doing first independ-ently of 2nd).....	.....little scope for for increasing on-job CIT training either. MA considers will have to wait till there is demand for CIT training from the placements: will happen longer-term.

	Time	Place	M.A.	Any Variation	No.	Groups	Equipment: Trainee	Assessment and Certification	Course Content
58	Intentions unclear	Unknown	Umbrella (motor vehicle maintenance & repair)	-	90	-		Highly unlikely	Very vague - just a statement that will use an off-job provider. Provided no CIT training at all last year as previous 2 days 'heavy' CIT course was considered inappropriate.
61	10 days	Training centre	Umbrella clerical, retail & motor vehicle)	3 distinct progs. retail, clerical, motor vehicle	300	16	1 : 1	Own Certificate	Clerical: WP Retail: DP, SS Motor vehicle, Microfiche, Electronic till
62	5 days off-job + use in workshop area	own Training room + terminals in each workshop area	Training workshop	Similar programmes for sewing, joinery, catering, general construction and audio visual	150	-	8 networked with hard drive (1 each dept.) BBC.	Own certificate	Small amount of WP and a little on DBs.
64	10 days	Local ITEC	Local community scheme project (painting & decorating)	No	150	12	1 : 1	Uses ITeC assessment forms	Developed by ITEC from interview with MA: makes a feature of CAD
65	5 days at most	own Training centre	Residents group (building)	dependent upon general educational ability	60	3	-	-	Some brought in 'education programs'. Aim at literacy & numeracy. Some use of WP.
72	5 days off-job 5 days on-job	Training Centre	Commercial training Organization (welding)	No	15	7	circus through equipment	As welding crafts	Use of programmable computerised welding equipment

	Trainer Support	Competence-based Objectives	On-job opportunities in CIT	Other Comment	Other Information
58	-	No	Some computerized fault finding in placements, but mostly very small garages & workshops without any CIT	At moment neither MA nor placements believe CIT to be of relevance to them: what they do will be to satisfy MSCs demands, rather than to meet trainees needs.	
61	Accredited Centre. Some in house from Amstrad dealer	Broad competences	Most use electronic till. Clerical use. Mechanics use microfiche in daily work.	Staff keen and attempts to to make CIT relevant to work. Mechanics also use exhaust analyser and Crypton tune at workplace.	
62	1 permanent staff member for CIT, trains scheme staff and works with ITEC	-	Use computer terminals for stock control	Trainees were thought to lack motivation and appeared unenthusiastic about CIT.	
64	ITEC	Yes: ITEC assessment forms are used	None: scheme concerned with painting, decorating, fencing, gardening and the community farm	Scheme moved to ITeC as FE provision proved unsatisfactory.	
65	Have had some help from ITEC	No	None	Renovating old factory: this is first year of this pattern. CIT is more often CAL designed to help with basic skills. In previous year was supposed to have had one week of CIT at college "but never happened	
72	Trainers have certificate of competence with Program welding equipment	Not in CIT	Possible on well equipped sites only	CIT **only** in welding craft skills context. No other applications WP/DB/SS are covered	

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	Time	Place	M.A.	Any Variation	No.	Groups	Equipment: Trainee	Assessment and Certification	Course Content
75	Part of Residential + on-job	Residential	Company (Gamekeepers)	No:	15		-	-	WP & DB on company computer
78	Varies (on-job)	Own premises	Agricultural engineers	Yes: divided into engineering clerical, stores	14		-	-	As relevant to job stores, modern office, engineering sections
83	10 days	5 days at FE 2 days work based, 3 days follow up at another FE	Umbrella (District Council)	No: mixture of trainees over 10 occ. families but all receive some initial course	150	10-12	1 : 1	Introducing own internal certificate	Introduction in 1st week: WP/DB/SS + programming
92	5 days	Training Centre	Agricultural College	Biased to occupational areas. Agric/Hort/Rural mech./Woodland & Estate management, floristry	165	15	1 : 2	-	Attempt to make relevant: computer control (Milking parlour); Stock control (Shop retail) etc.
95	5 days	CIT course at local college	Factory for national electrical co.	Developing CIT courses specialising in mechanical handling and fabrication	45		1 : 1	-	Are attempting to make CIT course more employment related
101	10 days + on-job for some	College	Umbrella (clerical, retail, community care)	Yes: work relates back to placement (survey etc.)	124	20	BBCs	-	College prepared

	Trainer Support	Competence-based Objectives	On-job opportunities for CIT	Other Comment	Other Information Available
75	AC support for some, others are self-taught	-	1 computer in company but often used by trainees	This is a rural scheme with limited resources and transport problems for trainees	
78	-	Some of the scheme competence objectives relate to CIT	All CIT training done on job with opportunities to carry out work tasks using CIT (except engineering)	CIT integrated into on the job training	
83	3 days awareness course in CIT for all staff provided by accredited centre	Internal certification: based on broad competences	Expected if computers are in use at work placement. (This applies to mainly admin/ clerical: about 50% of placements)	Manager sees need for development of work based project scheme in between courses	
92	In house for CIT	-	Yes but development of this is slow in floristry	Good results from this scheme in terms of full time work and progression to college	
95	College view AC as a competitor development. They rather	-	None at work	Good: CIT limited by limited facilities in house but overall training good	
101	Used college tutors: but some general sessions provided by AC for MAs. Interested in contact with other schemes about CIT	-	Clerical easy. Retail only for large companies. Community care - none.	Some attempt at integration (ie. establishing clear-links between off-job and work at placement)	

	Time	Place	M.A.	Any Variation	No. Groups	Equipment: Trainee	Assessment and Certification	Course Content
102	5 weeks (3 wks in Year 1; 2 wks in Year 2)	Training Centre	Wide variety of placements	Yes: according to interest and experience (each group splits into 3-4 sub-groups). Trainees CIT experience (home and school varies greatly)	150 10-12 (2 tutors)	1 : 1 (Amstrads, Commodores)	RSA (CLAIT) + own	WP: SS: DB: Logo graphics, sensors, uses projects, assignments for CLAIT etc. Significantly, programme is very different from 2 and half years ago
103	10 days	College	Off-job provider (all types of placement)	Yes: trainees entry levels very different also progression is a real possibility	100+ 12-20	1 : 1 for WP 1 : 2 for SS (works better than 1 : 1) very well equipped	RSA (CLAIT)	WP 1st year CLAIT 2nd year
105	10 days + on-job for all (substantial for some)	Regional Training Centre	Single company (electricity supply)	Yes: (operations, clerical, staff and sales all have different emphases)	108 12 (same background)	1 : 1 but 1 : 2 for some applications	own	1st week appreciation, apply on-job, then 2nd week on relevant applications, WP, DB, SS, graphics, viewdata, simulations. 1/2 day Basic (would prefer Logo)

	Trainer Support	Competence-based Objectives	On-job opportunities for CIT	Other comment	Other information available
102	Own computer tutors (now very experienced with these groups)	Yes	Unlikely	Trainees respond well to the CIT. Most youngsters classified low-ability at school. 15-20% receive RSA Stage 1, most others profile sentences, but some do not get these. Training centre takes other schemes trainees. Considers key to success is one trainee/computer + level of staffing support.	
103	College very strong in CIT	(RSA)	-	Critical that all software is of an industrial standard, otherwise trainees do not relate to it. Experience over 4 years with CIT at all levels.	
105	-	Yes	Very strong links: ops-paraprogramming, craft - WP etc. sales viewdata, also knowledge of CIT in products	Trainees in shops often seen as the CIT specialist (may even train others)	May be worth a visit Also takes other schemes trainees

APPENDIX 2

PA Contextual Comments

What follows is a selection of the comments from Programme Assessors about their schemes, as well as their views about the direction that CIT is taking in their area. The comments refer to some of the areas of Appendix 1.

General Comment - Area A
The P.A. here admits to very little knowledge about CIT: "goes along tramlines" of what is required. Any problems or queries about CIT are referred to Accredited Centre.

Exerts little pressure on schemes about CIT: virtually only if blatant cases of poor or non-existent delivery. Certainly no comment on content: eg whether certain activities are inappropriate; external accreditation etc.

Only received some very basic training- computer appreciation two day courses- felt these were OK but the pace was too fast.

General Comment - Area B
P.A. fairly new to this area office, but considers that especially with CIT PAs sometimes let things through unchallenged because of their own lack of knowledge in the field. Would therefore welcome further training for PAs. At the moment PAs only ask one question about CIT and that is "how is it integrated into the rest of the programme?"

Ideas in the "blue book" could be made more concrete, and examples of "good practice" would be a considerable help. Finally, firm guidelines should be issued about what is/is not satisfactory before CIT component of scheme receives approval.

General Comment - Area C
In this area most placements are small , and offer few opportunities for CIT on-the-job. Even where they do, there is little pressure to provide more than a minimum: 5 days off-job in groups of 16, with no recognised qualifications.

One training provider had now bought their own equipment and would provide their own CIT training: but the tutor has no previous experience in this field but was "expected to pick it up as he went along".

PAs "often not skilled enough" to query what should be in CIT component: hence very often would just accept "5 day CL course" as sufficient information. Would like more support: guidelines specifics about sensible things to be included (ie specific to relevant industry). Guidelines could be given to MAs, via the PAs. Has impression that tutors would welcome more material on relevant applications and that we "could make a lot more of these courses with relatively little extra push"

General Comment - area D
The PA was clearly very interested in CIT: critical of the lack of integration between on and off - job activities. PA had an overall impression of CIT activities throughout area, and this knowledge was utilized to exemplify the lack of integration.

Small placements sent trainees on a standard college course (BTEC first award), which had CIT component, and coupled this with hands-on experience at the workplace, but the two sectors were both treated and seen by the trainees as distinct.

PA also had reservations about allowing use of computerized equipment to be taken as an application (some of the tasks were of short duration and performed repetitively), which meant they were getting apparently substantial CIT experience. MSC ought to clarify its policy in this area.

More generally, in industries where CIT is becoming important and/or increasingly familiar this is feeding through to YTS training: in such cases there seems to be a recognition of training needs for the future. However, other industries (eg construction and motor vehicle repair) seemed consistently hostile.

Materials to support PAs, especially examples of particular applications, were considered to be vital. Both pressure and support had to be directed at MAs , impossibility of getting at the placements directly (3,000 in the city altogether!) Lack of awareness of recognition of previous CIT experience also considered problematic. PA feels clearer guidelines should be issued: for example, a minimum of 10 days off-job. This could be waived, however, if on-job activities resulted in a level of competence reflected in a recognised qualification. Area office did try to get schemes to commit themselves to at least 10 days of CIT but this ran into opposition on two grounds: the cost and the relevance of CIT. Most PAs have had a week of training on CIT, but too often this was heavily knowledge-based. Would like to receive information on "good practice" (eg on overcoming problems, suitable course, assessment systems etc.), thought setting up of local networks would also be useful. Local authority encourages colleges to provide CIT on a flexible basis: the colleges have responded and do attempt to tailor their courses according to what the MA wants (noted that colleges vary enormously as to how keen they are on reaching different audiences, usage of their resources etc. In this area, colleges are anxious to get the business). However the quality of provision at the college depends on how much information they get about schemes (placements etc) and length of course in days.

General comment - area E
Both the Programme Development officer and the local Programme Assessor in this region expressed an interest in the CIT part of training. The PDO had, in fact, produced example "work based

project" material (particularly for construction industry trainees). They had used the Core Skills part II manual and had produced their own outline CIT course. (Which included a section to review the trainees previous experience of CIT)

They outlined the development of CIT in their area over the last three years :-

CIT was seen then as an isolated topic by MAs. The trainees learned "about computers". The same training programme was used for everybody, from "bakers to engineers". The courses were usually based at FE colleges.

The courses consisted of "programming and playing games". Most trainees "voted with their feet" and did not attend CIT courses at FE.

In later years, it became possible to develop more relevant courses. Retail and clerical schemes were seen as comparatively easy to get "applications" for, as well as to provide "in house" training.

There were more problems with (for example) bricklayers and joiners. But the PA pointed out that Construction industry workers use bank cash machines and other everyday computer applications, so there was a need for them to be familiar with computers.

"Most" places had now bought their own equipment or now sent their YTS trainees to an ITEC where there were "smaller, more flexible units."

"Few" schemes, unless they were doing BTEC courses "now use FE for CIT".

They detailed some of the problems encountered when trying to encourage "on the job" CIT training :-

> In the field of CAD/CAM and telecommunications, there was "No spare capacity" to use the equipment for training purposes.
>
> In the clerical area, work placements had feared that trainees might erase (or change) valuable data.

The PDO recommended that the CIT provision be broadened to include "new technology" areas. He cited as an example "exhaust gas analyzers" in garages. He made the proviso that the training would be "practically based", not just a slide show of expensive equipment. He recommended a pattern of five days "off job" training and five days based at the workplace doing "work based projects".

General comment - area F
This area has a long history of interest in CIT development. In conjunction with the local Accredited centre, the Programme Development officer has supported a series of initiatives and developments.

Local provision of CIT at FE colleges came in for some criticism. They felt that the problem lay with FE tutors trying to "water down" courses from BTEC. (Rather than construct special YTS courses.)

One of the peculiar problems of the area was that, due to the Accredited Centre awareness courses, many of the scheme managers were well aware of the high quality training available within parts of the area but were unable to negotiate with the local FE college for the kind of course they wanted.

Umbrella schemes had particular difficulties in this respect, where they might have a group of trainees working in five or six trades.

General comment - area G
Some of the PAs here questioned the need for PAs to be involved with schemes training courses in such detail.

Although professing not to be CIT experts, they were able to make reasoned assessments of the "quality of training" in CIT.

"Bad schemes" were seen as "doing CIT to meet the requirement, not to meet the need."

One of the PAs expressed the opinion that in his area it was common practice for FE colleges to be able to provide CIT courses biased to relevance to a particular trade. They were even able to provide relevant material for a concurrent mixture of trades.

There was no problem in setting up CIT courses biased towards a particular trade and advertising them to umbrella MAs to "in fill".

APPENDIX 3

Work with West Wales Accredited Centre

The AC staff training co-ordinator had a special interest in CIT, and our consultant had previously ran some CIT courses there. It was agreed to set up a CIT support group based on the accredited centre, as well as working intensively with one managing agent on the development of `good practice'. Details of the operation of the network and the `good practice' findings are detailed in a later report, but what is of interest here is the attempt to find out some basic details about CIT provision.

Questionnaire on computer training sent to schemes:

This questionnaire was intended to provide a detailed look at the provision of CIT training in the schemes in a particular area.

The questionnaire was sent to all of the schemes covered by the West Wales Accredited Centre area, excluding Itecs. The questionnaire was accompanied by a covering letter offering an invitation to a self help/support group.

69 questionnaires sent out; 51 former mode A, 18 former mode B. 22 questionnaire were returned; of these 4 were returned blank with covering letters. (Comment on possible reasons for low response rate are given later).

Here are quotations from two of the covering letters, our comments in brackets:

"We have two programmes operational locally, neither involve computer training." (This is a branch of a national retail chain operating Laser scanning point of sale system. This scheme is used by others as a place to visit to see a commercial computer application.)

"We do not get involved in computer training. All such inputs are done by the college of FE as part of the off-job training. (This is from a local office of a large training Board.)

18 questionnaires completed: 9 former mode B, 6 mode A using sponsor placements, and 3 mode A in-house .

The questionnaires were divided into two groups, group 1 (These were respondents who expected to attend the meeting. 5 former mode A and 5 former mode B) and group 2 (who said they could not attend the meeting. These were 6 former mode A and 2 former mode B.)

Here is a brief summary of some of the questionnaire responses:

Question 1: **How do you provide computer training for your YTS trainees?**

	Group 1	Group 2	Total
Own premises	7	3	10
Itec	1	2	3
College of FE	1	2	3
Partly private provider	1	1	2

Question 2: **Has the respondent had computer training?**

	Group 1	Group 2	Total
Yes	9	3	12
No	1	5	6

Question 3: **Have any other members of staff had computer training?**

	Group 1	Group 2	Total
Yes	9	5	14
No	1	3	4

Question 5: **Do all trainees follow the same course on computer training?**

	Group 1	Group 2	Total
Yes	7	4	11
No	3	3	6

Question 7: **Do any trainees have the opportunity to obtain a qualification in computing?**

	Group 1	Group 2	Total
Yes	5	2	7
No	5	6	11

Question 8: **Do any of your trainees use computers on the job?**

	Group 1	Group 2	Total
Yes	10	6	16
No	0	2	2

(Included with the "Yes" answers were 6 (5 and 1) who qualified this with "clerical trainees only")

Question 10: **How is the computer training time arranged?**

	Group 1	Group 2	Total
10 day block	1	0	1
2 @ 5 day block	1	1	2
1 @ 5 day block	1	4	5
regular weekly sessions	5	0	5
Provision varies	1	2	3
No answer	1	1	2

Question 11 and 12: **What is the number of trainees per computer?**

	Group 1	Group 2	Total
1 : 1	9	1	10
2 : 1	1	4	5
No answer	0	3	3

Question 13: **What types of computer are used for training?**

	Group 1	Group 2	Total
List includes:			
BBC (all types)	9	3	12
IBM or compatibles	0	1	1
Apricot	2	3	5
Amstrad PCW	3	1	4
Other 8 bit Amstrad	0	1	1
Burroughs	0	1	1
Commodore	0	1	1
Sanyo	0	1	1
Sharp	0	1	1
No answer	0	1	1

Question 16: **What were the sources of advice or support received?**

	Group 1	Group 2	Total
List includes:			
MSC	5	2	5
AC	6	1	7
Other	4	3	7
None	0	2	2
No answer	0	2	2

Question 6: **What type of content in computer training courses?**

Summary of topics, with the number of times mentioned.

Programming	6	COMPET	2
Spreadsheet	5	CNC	1
Wordprocessing	5	Interfacing	1
Keyboarding	5	Personal Accounting	1
Computer Applications	4	Profit and loss	1
Background and History	4	Electronic Mail	1
Graphics/colour/sound	3	PRESTEL	1
Connecting system	3	Flowcharting	1
Stock control	3	On-job	1
Database	3	COIC Computer literacy	1
Robotics	2	Health and safety	1
Vocationally related pack.	2		

Details of some replies for uses of computers "on job" includes: Computer controlled production machinery, painting and decorating (in a workshop), administration, CNC, engineering applications,

fault finding and circuit work, process control, Viewdata, Electronics and interfacing, stores,clerical,wordprocessing,data entry, Hotel reception, work planning.

Responses to the question: **What problems are you currently facing?**
Answers included:
A set standard for assessment purposes.
Outside provision not relevant for trainees.
Insufficient software for some occupational areas (construction, care, vehicle maintenance).
Making training relevant.
Making trainees see the relevance.
Finding providers.
Time.
Cost.

Comments about the results:
"One reason for questionnaires not being returned may be that they had not been passed on to those who were able to answer them. I also suspect that some of the mode A schemes have the same view of their level of involvement in computer training as the (already noted) ITB and did not reply because they didn't know the answers and were content to leave it entirely to off-job providers. There was also evidence of managers wanting to check what respondents had written."

"Answers from group 1 suggest a higher level of computer training among those providers and more control by them of how the training was offered."

"There seems to be a need for strategies to raise the awareness of mode A scheme personnel. My experience on AC courses has been that most mode A personnel do not attend with the intention of getting involved in the computer training of the trainees but because they are going to have computers in the office. Once on the course, it has been possible to make them aware that they should be negotiating the content of the course, with the outside provider, to make the content relevant."

"Quite a few people seem to be under the impression that they are providing integrated computer training if they use CBT with content related to the occupation, eg the COIC catering CBT package."

Other comments about CIT provision locally:
Some CIT tutors very keen to establish to occupational relevance if possible but are faced with a number of problems. Workplace supervisors themselves may not be interested or supportive (where they are not only is it easier to produce meaningful materials, but some of the `interest' rubs off on the trainees e.g. in use of program to determine costs of painting and decorating). The applications, even when occupationally relevant, may seem so `remote' from what the trainees are actually doing (e.g. in

construction) that they do **not** generate interest.

Same type of 3-way split evident here as elsewhere. The following examples illustrate the `chasm' between the 2 ends:

- [Brewery] in-house provision, covering all recommended applications. CGLI certificated. Use of self-learning packages on CIT, with option of doing more advanced course. All YTS managers are put through same course.

- Experience of a CIT tutor working with a group, for whom this course was to be their sole exposure to CIT, who found the following:

  "the room available to me contained 5 networked Commodors for which there was no software available and 4 BBCs, but only one disc drive - the others were under repair ... inappropriate (subject specific CBT material) software ... and no established links between computer staff and scheme field officers".

The idea of a support group was readily seized upon by a number of providers, who wished to focus upon the following topics in future meetings:

- integration
- use of computers with lower ability trainees
- motivating trainees: strategies and software
- effective structuring of computer training

APPENDIX 4

CIT PRACTICE IN TRAINING WORKSHOP SCHEMES:

1. **Visits to : Applying Computer Literacy workshop schemes**

Applying computer literacy (Pilot Training Programme)
(Summary of ACL information sheet 1)

This MSC funded project co-ordinates the last year of "Information technology into training workshops" pilot scheme. The Department of Trade and Industry (1984-86 in two phases) provided £580,000 worth of commercial capacity hardware and software for the 67 pilot training workshop schemes.(These are Gemini or LSI hard disc (fixed disc) networks. Software included Wordstar, Dbase2, Supercalc, and CAD software.)

Further investment by the MSC included the development of staff training and the commissioning of computer based learning materials.

The aim of the project was to enable trainees and supervisors to use computer equipment as a practical tool rather than a classroom activity. Schemes in the pilot have developed "work-based" approaches to computer literacy training integrated into the usual workshop activities. A separate report "work-based computer literacy" was produced by the ACL team in March 1987.

Report on visit :ACL3

This was a large complex of skill workshop areas. Part of the scheme was an ITeC (not visited). The areas were as follows:

- Clerical, Administration and office services
- Horticulture
- Printing and design
- Mechanical engineering
- Motor vehicle engineering
- Fabrication and welding
- Electrical engineering
- Sewing
- Scientific Technician
- Building trades
- Manufacturing
- Carpentry and joinery
- Leisure and recreation

Some of these groups are quite small (less than ten trainees). Outside contracts for work in the workshops were sought.

This was another scheme provided with a computer network by the DTI. Most of the workshop areas visited had their own computer terminal (usually protected inside a wooden cabinet: fabricated by the trainees.)

The CIT tutor here was also aware of the dual role and had worked out a policy of development in conjunction with the skill tutors. Many of the workshop applications were imaginative and provided realistic and important tasks using the computer; this approach could well be emulated in other schemes. The programs were available from a menu (once "logged" on to the system.) The only part of the system that seemed cumbersome was that any "print out" had to be collected from the computer system area. The system for doing this was well understood by the users but some of the "spontaneity" of getting a direct "print out" at the terminal was perhaps lost.

Some of the applications were :
In the engineering area : stock control (used by the trainees), "Zeus" tables (fraction to decimal conversion tables, thread diameter tables etc. It was stated by the trainer that it was easier for the trainee to get the information from the computer system than to look it up in the book of tables)

In the carpentry area: as well as similar applications, a file set up to keep a record of the contents of the toolbox issued to each trainee. (The tool boxes were checked several times a week, any items missing had to be "reported" to the computer.)

The CIT tutor here intended to put a group of trainees through the full CGLI 726 certification (elementary coding, elementary database etc.) and had already had a group of trainees pass the "Cambridge Computer Literacy" certificate.

In addition to the network system, there were a group of BBC B disc based systems for use with groups to develop CIT skills.

Overall comments

It must be borne in mind that these schemes are not "average" since they were visited precisely because they were considered to be sites of "good practice". It was estimated that about 14 out of 67 pilot schemes could be considered to be demonstrating "good practice" (Report to the Advisory Panel:ACL project)

The schemes visited had devoted a lot of resources to the purchase of equipment and programs (over and above that from the DTI). In addition to their role in CIT staff development, the CIT tutors had spent a lot of time

developing materials and techniques. In terms of the ACL network, these schemes had been "providers" of material rather than consumers. (Although within the project, they were well able to profit from the development work at other sites.)

The flexibility in the role of the CIT tutor points to a management structure that is aware and supportive of the needs of CIT. This training is not bought in as a package from a college, but provided in-house. Some of the support will have been prompted by the ACL project co-ordinators (In addition to the recognition by the scheme manager that the schemes are "exemplars of good practice"?) but the rest will depend on the working relationship between the scheme manager and the CIT tutor.

Some of the schemes visited had a policy of recruiting tutors who were already aware of the applications of CIT in their skill area. This was seen as a means of developing a "community" of CIT users within the scheme. The use of computer terminals was seen as a part of the practical training given to the trainees, not as an adjunct. (An alternative way of performing necessary workshop tasks. In some senses the tasks were "artificial", in that most commercial workshops would not provide terminals, but no more artificial than any practice exercise performed in a workshop.)

Here are some of the points that have emerged from the visits of the ACL co-ordinators to the rest of the 67 schemes (ACL progress report:Advisory Committee) :-

A key factor in the most successful schemes has been the appointment of an enthusiastic computer training co-ordinator.

Schemes use the equipment in different ways.

Having the network in just one room promotes the provision of computer literacy as a structured block but only gradually involves other craft supervisors.

Having the network distributed in the craft sections results in more immediate involvement of craft supervisors but the training may be more patchy and less structured.

The areas where improvement might be made are seen (by ACL) as :-

- As many as 75% of schemes still fail to make full use of equipment (roughly 14 "good practice" schemes out of 67).

- The level of craft supervisor involvement is low in many schemes.

- The majority of the work-based computer literacy training schemes remain unstructured and have little effective assessment.

- 90% of the schemes urgently require applications software to enable them to make fuller use of Dbase 2 and to a lesser extent, spreadsheets.

2. Review of the provision of training in a national organization of workshops

These workshops are managed under the auspices of a national non-profit making organization. The manager with responsibility for CIT has very kindly allowed us to visit his schemes as well as providing us with data from his survey of resources in CIT.

The schemes are divided into two divisions : schemes with at least six computers and a full time Computer Literacy Tutor (CLT) and those with less.

The workshop schemes provide their own training for CIT (sometimes from another branch), they do not buy in training from other providers.

An important outcome of this work is the recognition of the high quality of CIT training available at some of the schemes as well as the commitment to its development through the rest.

Visit 2 :WS6

This was an ex-mode B workshop scheme, based on two sites. It had around 150 trainees including 75 premium.

Workshop areas:

Retail (sales and personal service.)
Community care
Multiskills (carpentry, plumbing, bricklaying ...)
Communications and Drama (used as a special needs group.)
Craft and design (pottery, fabrics, screen print)

The scheme manager and the training officer have developed ways of using the computers in the administration of the scheme, and they are interested in further developments of this.

Provision of CIT

All trainees had 13 days of computer training, one day per week in their off the job training block. "Very few" placements provide the opportunity for CIT use "on the job".

The scheme has seven disc based BBC B microcomputers for use in training. The course followed by all of the trainees includes wordprocessing (using EDWORD), a database program (Acornsoft Record).

The trainees keep their own records up to date, set up useful data for the scheme and have projects to set up their own database (one popular one is a database of local public houses: name, address, brewery, publicans name etc)

No programming is done as it is "not relevant to the trainees". They find that all of their trainees are interested in using computers.

They also use (and recommend) "Quiz quest", which presents a quiz on the computer. (More importantly it allows you to create files of your own questions.) "Basically speaking" which is a computer based learning program that covers "using a computer" as well as some of the history of computers.

Simple literacy and number development programs are used (ASK software) when necessary for some of the trainees.

The majority of the other skill area tutors are prepared to make use of the computers in their workshop areas and it is regarded as the CIT tutor's role to find suitable applications.

Comment

The CIT provision in this scheme was very well thought out. The major constraint seen by the staff was lack of room. (The usual, secure, computer room had been "re-organised" to another workshop area.)

The software used was appropriate for the trainees, and thought was given to relevant projects. The CIT tutor was interested in the integration of CIT within workshop areas.

APPENDIX 5

GLOSSARY OF ABBREVIATIONS

ABTA	Association of British Travel Agents
AC	Accredited (Training) Centre
ACL	Applying Computer Literacy
AEB	Associated Examining Board
BTEC	Business and Technician Education Council
CAD/CAM	Computer-Aided Design/Computer-Aided Manufacture
CIT	Computer and InformationTechnology
CL	Computer Literacy
CLAIT	Computer Literacy and Information Technology (RSA)
CNC	Computer Numerical Control
CPVE	Certificate of Pre-vocational Education
DB	Database
DTI	Department of Trade and Industry
EITB	Engineering Industry Training Board
EPOS	Electronic Point of Sale
FE	Further Education
IT	Information Technology
ITeC	Information Technology Centre
LCCI	London Chamber of Commerce and Industry
LCU	Large Companies Unit (MSC)
MA	Managing Agent
MSC	Manpower Services Commission
NCVQ	National Council for Vocational Qualifications
NLQ	Near Letter Quality
NPTC	National Proficiency Test Certificate
NTB	National Training Board
PA	Programme Assessor
RSA	Royal Society of Arts
SCOTVEC	Scottish Vocational Educational Council
SS	Spreadsheets
TSAS	Training and Standards Advisory Service
TVEI	Training and Vocational Education Initiative
WE	Work Experience
WP	Word Processing
YTS	Youth Training Scheme

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Alan Brown and Jonathan Riley are researchers in the Department of Educational Studies at the University of Surrey.

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